

Claims

1. A decoupling device (1) for an actuator (2), in particular an electric motor (2), with a one-part or multiple part decoupling housing (6, 7, 8), which is connected to a function housing (13) and at least partially encompasses the actuator (2), and with decoupling elements (14, 15) comprised of an elastic material, wherein each decoupling element (14, 15) rests against support shoulders (24, 25, 26), characterized in that a securing element (19) is disposed between one set of decoupling elements (14, 15) and another set of decoupling elements (14, 15) and the actuator (2) engages the securing element (19).

2. The decoupling device according to claim 1, characterized in that at least two support shoulders (24, 25, 26) for a decoupling element (14, 15) are constituted by the decoupling housing (6, 7, 8) or the function housing (13).

3. The decoupling device according to claim 2, characterized in that two support shoulders (24, 25, 26) for a decoupling element (14, 15) are constituted by the securing element (19).

4. The decoupling device according to claim 2 or 3, characterized in that the decoupling elements (14, 15) are disposed in pairs.

5. The decoupling device according to claim 2, 3, or 4, characterized in that the securing element (19) has a radial projection (35) extending partially or entirely around it and that the securing element (19) has at least one slot (36) in its radial projection (35), in the vicinity of the decoupling elements (14, 15).

6. The decoupling device according to claim 5, characterized in that the decoupling elements (14, 15) are connected to each other in pairs by an intermediary piece (20).

7. The decoupling device according to one of claims 2 to 4, characterized in that the securing element (19) has a radial projection (35) extending partially or entirely around it and that the securing element (19) has at least one recess (45) in its radial projection (35), in the vicinity of the decoupling elements (14, 15).

8. The decoupling device according to one or more of claims 2 to 7, characterized in that in the decoupling housing (6, 7, 8) or in the function housing (13), the support shoulders (24, 25, 26) are constituted by means of at least one recess (23) in an outer region of the decoupling housing (6, 7, 8) or function housing (13).

9. The decoupling device according to one or more of claims 2 to 7, characterized in that there is at least one column (41) in which the support shoulders (24, 25, 26) are constituted by a recess (23) on an end face of the column (41).

10. The decoupling device according to claim 8 or 9, characterized in that the decoupling housing (6, 7, 8) or the function housing (13) and the securing element (19) have axial and radial support shoulders (24.1, 24.2), and at least the axial support shoulders (24.1) are embodied as arc-shaped, wherein the curvature of the arc-shaped support shoulders (24, 25, 26) at most corresponds to the curvature of the decoupling elements (14, 15).

11. The decoupling device according to one or more of the preceding claims, characterized in that the decoupling device (1) has a longitudinal axis (3) and the support shoulders (24, 25, 26) for the decoupling elements (14, 15) are embodied in relation to one another so that a rotational axis (27) of the decoupling elements (14, 15) extends obliquely to the longitudinal axis (3).

12. The decoupling device according to one or more of the preceding claims, characterized in that the decoupling elements (14, 15) are embodied as rolling bodies.

13. The decoupling device according to claim 12, characterized in that the rolling bodies are embodied in the form of balls.

14. The decoupling device according to one or more of the preceding claims, characterized in that the one set of decoupling elements (14) is disposed in a first plane extending perpendicular to the longitudinal axis (3) and the other set of decoupling elements (15) is disposed in a plane extending parallel to the first.

15. The decoupling device according to one or more of the preceding claims, characterized in that decoupling elements (14, 15) adjoining one another in the circumference direction enclose a uniform angle α in relation to one another.

16. The decoupling device according to one or more of the preceding claims, characterized in that the decoupling elements (14, 15) are disposed above one another on a line (18) extending parallel to the longitudinal axis (3).